

Appl. No. 09/693,019
Amtd. April 20, 2004
Reply to Office Action of February 3, 2004

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Listing of Claims:

Claim 1 (cancelled)

Claim 2 (amended) In a network having a plurality nodes and mobile stations, a method for forwarding transient data packets from a corresponding host node in a first SIP-compliant network environment to a mobile node station, said mobile node station having traveled from said first compliant SIP-network environment to a second SIP-compliant network environment, said method comprising:

reinviting said corresponding host node to said mobile node station using SIP INVITE, said mobile node station being in said second SIP-compliant network environment;

creating a short lived tunnel between a first edge router and controller located within said first SIP-compliant network environment and a second edge router and controller within said second SIP-compliant network environment using the a SIP INFO method;

forwarding said transient data packets to said mobile node station via said tunnel; and

discontinuing said forwarding of said data packets to said mobile node station after a brief time-out period.

Claim 3 (amended) For use in a SIP-compliant network having a plurality of nodes and mobile stations, a SIP_EYE Agent for monitoring and tracking all TCP connections and their related identifiers within a mobile node station, said SIP_EYE Agent comprising:

a record of each of said TCP connection connections, each record having associated therewith:

- (a) an original IP address of said mobile node station,
- (b) a previous IP address of said mobile node station,
- (c) a current IP address of said mobile node station, and
- (d) an original IP address of a corresponding host node;

wherein said original IP address of said mobile node station is the IP address of said mobile node station at the beginning of the TCP connection, said previous IP address of said mobile node station is the last IP address of said mobile node station just before the current IP address of said mobile node station, and said original IP address of said

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corresponding host node is the IP address of said corresponding host node at the beginning of the TCP connection.

Claim 4 (amended) In a SIP-compliant network having a plurality of nodes and mobile stations, a method for reducing the amount of time a mobile node has to register and configure itself in a visiting environment, said method comprising:

adding a registration/hand-off registration or hand-off option to the a SIP REGISTER method; and

equipping a SIP registrar node with a DHCP client node and co locating said registrar node with a DHCP server node to enable said SIP registrar node to assign an IP address to said mobile node station thereby reducing IP acquisition time.

Claim 5 (amended) A method according to claim 4 further comprising replicating a profile of said mobile node station in said visiting environment to reduce said authentication time of said mobile node station.

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Claim 6 (cancelled)

Claim 7 (amended) A computer-readable medium having computer executable instructions for performing a method for providing mobility support from a first SIP-compliant network environment to a second SIP-compliant network environment, said method comprising:

assigning a personal identifier to a mobile user;

associating said personal identifier to a mobile terminal-station;

associating a first temporary IP address from said first environment with said personal identifier;

receiving packets of data at said mobile terminal-station from a corresponding host wherein each of said packets of data comprises a source IP address and a destination IP address, said destination IP address being said first temporary IP address and said source IP address being said IP address associated with said corresponding host;

monitoring said mobile terminal station to sense movement of said mobile terminal station from said first environment to said second environment;

associating a second temporary IP address from said second environment with said personal identifier;

forwarding to said second temporary IP address packets of data having said first temporary IP address as said destination address;

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sending said second temporary IP address to said source IP address; and discontinuing forwarding of packets of data having said first temporary address as said destination address to said second temporary IP address.

Claim 8 (amended) A computer-readable medium having computer-executable instructions for performing a method to be executed in a network adapted to support mobility having a plurality of nodes and mobile stations; said method for forwarding transient data packets from a corresponding host node in a first SIP-compliant network environment to a mobile node station, said mobile node station having traveled from said first SIP-compliant network environment to a second SIP- compliant network environment, said method comprising:

reinviting said corresponding host node to said mobile node station using SIP INVITE, said mobile node station being in said second SIP- compliant network environment;

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creating a short-lived tunnel between a first edge router and controller located within said first SIP-compliant network environment and a second edge router and controller located within said second SIP-compliant network environment using the a SIP INFO method;

forwarding said transient data packets to said mobile node station via said tunnel; and

discontinuing said forwarding of said data packets to said mobile node station after a brief time-out period.

Claim 9 (amended) A computer-readable medium having computer-executable instructions for performing a method to be executed in a SIP-compliant network having a plurality of nodes and mobile stations, said method for reducing the amount of time a mobile node station takes to register and configure itself in a visiting environment and comprising:

adding a registration/hand-off registration or hand-off option to the a SIP REGISTER method; and

equipping a SIP registrar node with a DHCP client node and co locating said SIP registrar node with a DHCP server node to enable said registrar node to assign an IP address to said mobile node station thereby reducing IP address acquisition time.

Claim 10 (amended) A computer-readable medium having computer-executable instructions for performing a method according to claim 9 further comprising replicating

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a profile of said mobile node station in said visiting environment to reduce said authentication time of said mobile node station.

Claim 11 (cancelled)

Claim 12 (amended) A system for providing mobility support from a first SIP-compliant network environment to a second SIP-compliant network environment, said system comprising:

a processor programmed to:

assign a personal identifier to a mobile user;

associate said personal identifier to a mobile terminal station;

associate a first temporary IP address from said first environment with said personal identifier;

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receive packets of data at said mobile terminal station from a corresponding host wherein each of said packets of data further comprises a source IP address and a destination IP address, said destination address being said first temporary IP address and said source IP address being said an IP address associated with said corresponding host;

monitor said mobile terminal station to sense movement of said mobile terminal station from said first environment to said second environment;

associate a secondary temporary IP address from said second environment with said personal identifier;

forward to said second temporary IP address packets of data having said first temporary IP address as said destination address;

send said second temporary IP address to said source IP address; and

discontinue forwarding of packets of data having said first temporary address as said destination address to said second temporary IP address.

Claim 13 (amended) A system for forwarding transient data packets addressed to a mobile node station from a corresponding host node in a first SIP-compliant network environment, said mobile node station having traveled from said first SIP-compliant network environment to a second SIP-compliant network environment, said method comprising:

a processor programmed to:

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reinvite said corresponding host node to said mobile node station using SIP INVITE; said mobile node in said second SIP-compliant network environment;

create a short-lived tunnel between a first edge router and controller located within said first SIP-compliant network environment and a second edge router and controller located within said second SIP-compliant network environment using the a SIP INFO method;

forward said transient data packets to said mobile node station via said tunnel; and

discontinue said forwarding of said data packets to said mobile node station after a brief time-out period.

Claim 14 (amended) A system for reducing the amount of time a mobile node station takes to register and configure itself in a visiting SIP-compliant network environment, comprising:

a processor programmed to:

add a registration/hand-off registration or hand-off option to the a SIP REGISTER method; and

equip a SIP registrar node with a DHCP client node and co locating said SIP registrar node with a DHCP server node to enable said SIP registrar node to assign an IP address to said mobile node station thereby reducing IP acquisition time.

Claim 15. (amended) A system according to claim 14 wherein said processor is further programmed to replicate a profile of said mobile node station in said visiting environment to reduce authentication time of said mobile node station.

Claim 16 (cancelled)